What is claimed is:

1.   A method of making an article of metallic alloy, comprising the steps of:

melting the metallic alloy under vacuum or partial pressure of inert gas;

pouring the metallic alloy into a metal mold with a cavity of uniform thickness, wherein the metal mold is made by machining or casting technique from materials having melting point in the temperature range 2350°F-3000°F and thermal conductivity between 300-400 Btu/Ft ^{2}/hr/in/°F in the temperature range 70-700°F and ultimate tensile strength betwen100 and 200 KSI,

solidifying the melted metallic alloy into a solid body taking the shape of the mold cavity as a plate of constant thickness;

preheating the solidified plate at temperature below the melting temperature of the metallic alloy;

deforming the preheated plate between two flat dies with the application of pressure along the thickness direction producing a plate with reduced but constant thickness;

optionally annealing the deformed plate at temperatures below the melting temperature of the metallic alloy.

2.   The method of Claim 1, wherein the mold has a temperature in the range from 30 to 800°C when the alloy is poured into the mold.

3.   The method of Claim 1, wherein the mold has a temperature in the range from 200 to 800°C when the alloy is poured into the mold.

4.   The method of Claim 1, wherein the mold has a temperature in the range from 100 to 500°C when the alloy is poured into the mold.

5.   The method of Claim 1, wherein the mold cavity is round or square or rectangular with a constant thickness in the range from 0.25 to 2 inch.

6.   The method of Claim 1, wherein the mold cavity is round or square or rectangular with a constant thickness in the range from 0.5 to 2 inch.

7.   The method of Claim 1, wherein the mold cavity is round or square or rectangular with a constant thickness in the range from 0.5 to 1 inch.

8.   The method of Claim 1, wherein the solidified plate is preheated before deformation at temperature in the range from 500 to 2200°F.

9.   The method of Claim 1, wherein the solidified plate is preheated before deformation at temperature in the range from 1000 to 2200°F.

10.   The method of Claim 1, wherein the solidified plate is preheated before deformation at temperature in the range from 1000 to 2000°F.

11.   The method of Claim 1, wherein the solidified plate is preheated before deformation at temperature in the range from 1200 to 1800°F.

12.   The method of Claim 1, wherein the solidified plate is preheated before deformation at temperatures in the range from 1200 to 1600°F.

13.   The method of Claim 1, wherein the preheated plate is pressed between two flat dies at strain rate in the range from 0.1/second to 10/second.

14.   The method of Claim 1, wherein the preheated plate is pressed between two flat dies at strain rate in the range from 0.5/second to 10/second.

15.   The method of Claim 1, wherein the preheated plate is pressed between two flat dies at strain rate in the range from 1/second to 10/second.

16. The method of Claim 1, wherein the preheated plate is pressed between two flat dies at strain rate in the range from 1/second to 5/second.

17. The method of Claim 1, wherein the preheated plate is deformed between two flat dies undergoing 10-80 % reduction in thickness.

18. The method of Claim 1, wherein the preheated plate is deformed between two flat dies to undergo 20-80 % reduction in thickness.

19. The method of Claim 1, wherein the preheated plate is deformed between two flat dies to undergo 30-70 % reduction in thickness.

20. The method of Claim 1, wherein the metallic alloy is a cobalt base alloy having the composition in weight percent as follows:

Cobalt = Balance
Chromium = 5 to 20%
Tantalum = 5 to 15%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total

21. The method of Claim 1, wherein the metallic alloy is a cobalt base alloy having the composition in weight percent as follows:

Cobalt = Balance
Chromium = 5-20%
Iron = 0-15%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

22.   The method of Claim 1, wherein the metallic alloy is a cobalt base alloy having the composition in weight percent as follows:

Cobalt   = Balance
Chromium   = 5-20%
Platinum   = 5-15%
Boron   = 0- 2 %

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

23.   The method of Claim 1, wherein the metallic alloy is a cobalt base alloy having the composition in weight percent as follows:

Cobalt   = Balance
Chromium   = 0-20%
Zirconium   = 0 - 5%
Niobium   = 0 - 5%
Tantalum   = 0 -10%
Hafnium   = 0 -10%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

24.   The method of Claim 1, wherein the metallic alloy is a nickel base alloy having the composition in weight percent as follows:

Nickel   = Balance
Chromium   = 0-20%
Iron   = 470- 10%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

25.   The method of Claim 1, wherein the metallic alloy is a nickel base alloy having the composition in weight percent as follows:

Nickel   =   Balance

Chromium   =   0-20%

Rhodium   =   0-10%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

26.   The method of Claim 1, wherein the metallic alloy is a nickel base alloy having the composition in weight percent as follows:

Nickel   =   Balance

Chromium   =   0- 20%

Tungsten   =   0- 10%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

27.   The method of Claim 1, wherein the metallic alloy is a nickel base alloy having the composition in weight percent as follows:

Nickel   =   Balance

Vanadium   =   0-10%

and inevitable impurity elements, wherein the impurity elements are less than 0.01% each and less than 0.05% total.

28.   The method of Claim 1, wherein the metallic alloy has the composition in weight percent as follows:

Nickel   =   99.95 to 99.99 %.

29.   A sputtering target made by the method of Claim 1.

30.   The sputtering target of Claim 29, wherein the sputtering target is a nickel base alloy sputtering target.

31.   The sputtering target of Claim 29, wherein the sputtering target is a cobalt base alloy sputtering target.

32.   A nickel base or cobalt base alloy sputtering target having a percentage pass through flux of at least 60%.

33.   The sputtering target of Claim 32, having a percentage pass through flux of at least 65%.

34.   The sputtering target of Claim 32, having a percentage pass through flux of 65% to 80%.

35.   The sputtering target of Claim 32, having a percentage pass through flux of 65% to 75%.

36.   The sputtering target of Claim 32, wherein the sputtering target is a nickel base alloy sputtering target.

37.   The sputtering target of Claim 32, wherein the sputtering target is a cobalt base alloy sputtering target.